



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

BETHESDA 14, MD.

NATIONAL INSTITUTES OF HEALTH

April 14, 1960

Professor Joshua Lederberg
Genetics Department
Stanford University
Palo Alto, California

Dear Josh:

I foolishly postponed the reading of your Nobel address until today, and I am embarrassed that I did not know your current ideas on the origin of life when I wrote last. However, I had heard about them vaguely from Newton Morton, and I felt that because of your active interest and definite ideas on the subject, you would be a particularly good person to expose my own ideas to.

The idea of a simple DNA-like polymeric system is appealing and I think a very likely intermediate step in the early evolution of life, but I believe the polymeric nature of the genetic material is a refinement that the earliest reproducing systems may have been able to do without. I think a careful analysis of the question reveals that mutable reproduction does not have to be built into the gene-analog. New "genes" might be contributed as exceptional by-products of the old ones or by entirely independent chemical reactions. Natural selection can operate on a "frozen" gene pool, i.e., on the backlog of genetic variability, and continued evolution by natural selection is indifferent to the source of new genetic material, as long as there is such a source.

I am enclosing a reprint of my 1957 paper in the hope that a rereading of it may help persuade you to see the problem as I see it.

Sincerely yours,

Gordon Allen